

IN THE CLAIMS:

The status of the claims is as follows:

1-4. (Cancelled)

5. (Original) A process for heating a thixocast Fe-based alloy material having a chilled structure into a semi-molten state in which solid and liquid phases coexist, the process comprising setting an average rate H_R of heating to a point A_1 in an Fe-C based equilibrium diagram to be in a range of $0.5^{\circ}\text{C/sec} \leq H_R \leq 6.0^{\circ}\text{C/sec}$, and setting a maximum temperature gradient T_G of the inside of the Fe-based alloy material per unit distance to be at $T_G \leq 7^{\circ}\text{C/mm}$.

6. (Original) A process for heating a thixocast Fe-based alloy material according to claim 5, further setting a sonic velocity Sv of said Fe-based alloy material determined by an ultrasonic velocity measurement to be at $Sv \geq 5,600 \text{ m/sec}$.